

AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A polished state monitoring apparatus for monitoring the progress of ~~polish on a polished~~ polishing of a surface to be polished of an object ~~to be polished~~ by obtaining a plurality of first characteristic value indicating the state of the polished surface at each sampling point every predetermined interval while scanning the surface and performing such an operation a plurality of times, said apparatus values from a plurality of sampling points in each of a plurality of scans of the surface, said polished state monitoring apparatus comprising:

a light emitting unit capable of emitting light for irradiating ~~said the~~ the surface; and
a ~~computing control~~ unit for controlling a sampling timing of ~~said the first~~ characteristic value values, and for receiving light reflected from ~~said the~~ the surface to generate ~~said the first~~ characteristic value values; and

~~wherein said computing unit monitors a time dependent variation of said characteristic value obtained from said sampling point at the same sampling timing during each scan~~
a calculating unit for calculating a plurality of second characteristic values by obtaining average values of a predetermined number of the first characteristic values which are obtained from adjacent sampling points in one scan of the surface, wherein at least one of the first characteristic values is used redundantly in calculating one of the second characteristic values and another of the second characteristic values.

2. **(Currently Amended)** A polished state monitoring apparatus according to claim

1, wherein said ~~computing control~~ unit ~~detects~~ is operable to detect an end point of the ~~polish~~ polishing in accordance with ~~said characteristic~~ a pre-selected value ~~obtained from at least one~~ pre-selected sampling point at said same sampling timing the second characteristic values.

3. (Currently Amended) A polished state monitoring apparatus according to claim 2, wherein said ~~at least one~~ the ~~pre-selected sampling point at said same sampling timing is a~~ sampling point value substantially ~~corresponding~~ corresponds to the center of said the surface.

4. (Currently Amended) A polished ~~state~~ state monitoring apparatus according to claim ~~[[2]]~~ 1, wherein said ~~computing control~~ unit is operable to ~~select a plurality of different~~ sampling points at said same sampling timings; monitor a time dependent variation of ~~each~~ sampling point; the second characteristic values and detect ~~the~~ an end point of the ~~polish~~ polishing.

5. (Currently Amended) A polished state monitoring apparatus according to claim 4, wherein the ~~polish~~ polishing is stopped when a specified number of ~~sampling points among~~ said different sampling points at said same sampling timings the second characteristic values reach the end point of the ~~polish~~ polishing.

6. (Canceled)

7. (Currently Amended) A polished state monitoring apparatus according to claim 1, wherein said ~~computing~~ calculating unit is operable to ~~output the average value of the~~ characteristic values from a predetermined number of sampling points including one sampling point during each scan at the same sampling timing of each scan and monitor a time dependent variation of said average value calculate a plurality of third characteristic values by obtaining average values of a predetermined number of the second characteristic values which are obtained from the same sampling point of each of the scans of the surface, and wherein at least one of the second characteristic values is used redundantly in calculating one of the third characteristic values and another of the third characteristic values.

8. (Currently Amended) A polished state monitoring apparatus ~~comprising the polished state monitoring apparatus as claimed in claim 1~~ according to claim 7, wherein said control unit is operable to monitor a time dependent variation of the third characteristic values and detect an end point of the polishing.

9. (Currently Amended) A polished state monitoring method for monitoring the progress of ~~polish~~ polishing of a surface to be polished of an object by obtaining a plurality of first characteristic values ~~characteristic value~~ indicating a state of the surface at each of a plurality of sampling point points ~~every predetermined interval~~ while scanning the surface, said method comprising ~~the steps of:~~

~~performing the scan~~ scanning the surface a plurality of times; ~~and~~

~~monitoring a time dependent variation of said characteristic values obtained from said sampling points at the same sampling timing during each scan~~

obtaining the plurality of first characteristic values from a plurality of sampling points in each of the scans of the surface; and

calculating a plurality of second characteristic values by obtaining average values of a predetermined number of the first characteristic values which are obtained from adjacent sampling points in one scan of the surface, wherein at least one of the first characteristic values is used redundantly in calculating one of the second characteristic values and another of the second characteristic values.

10. (Currently Amended) A polished state monitoring method according to claim 9, ~~wherein at least one sampling point at said same sampling timing of said scan is selected to detect~~ further comprising detecting an end point of the polish polishing in accordance with a pre-selected value from the second characteristic values.

11. (Currently Amended) A polished state monitoring method according to claim 10, wherein ~~said at least one selected sampling point at said same sampling timing is a sampling point~~ the pre-selected value substantially corresponding corresponds to the center of ~~said~~ the surface.

12. (Currently Amended) A polished state monitoring method according to claim 9,

~~wherein a plurality of different sampling points at said same sampling timings are selected to monitor~~ further comprising:

monitoring a time dependent variation of each sampling point the second characteristic values; and

~~detect~~ detecting an the end point of the ~~polish~~ polishing.

13. (Currently Amended) A polished state monitoring method according to claim 12, wherein the end point of the polishing ~~polish is stopped~~ is detected when a specified number of sampling points among the different sampling points ~~at said same sampling timings~~ reach the end point of the ~~polish~~ polishing.

14. (Canceled)

15. (Currently Amended) A polished state monitoring method according to claim 9, ~~wherein the average value of the characteristic values from a predetermined number of sampling points including one sampling point during each scan at the same sampling timing of said scan is outputted to monitor a time dependent variation of said average value~~ further comprising calculating a plurality of third characteristic values by obtaining average values of a predetermined number of the second characteristic values which are obtained from the same sampling point of each of the scans of the surface,

wherein at least one of the second characteristic values is used redundantly in

calculating one of the third characteristic values and another of the third characteristic values.

16. (Currently Amended) A polishing state monitoring method ~~for executing a polished state monitoring method as claimed in claim 9~~ according to claim 15, further comprising:

monitoring a time dependent variation of the second characteristic values; and
detecting an end point of the polishing.

17-20. (Canceled)

21. (New) A polishing apparatus comprising a polished state monitoring apparatus as claimed in claim 1.

22. (New) A polishing method for executing a polished state monitoring method as claimed in claim 9.